

## REMARKS

Claims 1-32 were canceled previously in the above-identified patent application. Claims 33-43 were previously pending and stand rejected. New claims 44-46 are being added hereby. Therefore, claims 33-46 will be pending after entry of this amendment.

### **Rejection Under 35 U.S.C. § 112**

Claims 33, 37, 40 and 43 stand rejected under the second paragraph of 35 U.S.C. § 112 as being indefinite. The office action contends that the limitations “increase in size of the fractional section of the arcuate vertical speed indicator scale” is unclear as to what and how the applicant means to increase in size of the fractional section.

In response, the second paragraphs of independent claims 33, 35, and 39 have been amended to specify that the display no longer comprises a “fractional section” of a vertical speed indicator scale, but now merely recite either an arcuate vertical speed indicator scale or a curved vertical indicator scale, depending upon the particular independent claim. Then, each rejected claim 33, 37, 40 and 43 has been amended to state that the TCAS resolution advisory condition triggers “enlargement of only a fractional section” of the vertical speed indicator scale. This feature is clearly shown in the drawings where Figures 1 and 2 depict an arcuate or curved vertical speed indicator scale denoting speeds between -6,000 and +6,000 feet per minute (application paragraph [0016]). Figure 3 denotes different versions of the display as occur in response to a TCAS resolution advisory condition in which an appropriate fractional section of the arcuate vertical speed indicator scale from the previous figures is shown enlarged on the display. Thus the proposed changes to the claims are clearly supported by the written description and drawings of the application as filed.

Furthermore, the changes clarify that the display includes an arcuate or curved vertical speed indicator scale and that a TCAS resolution advisory condition triggers enlargement of a fractional section of the respective scale. Therefore, it is submitted that amended claims 33, 37, 40, and 43 fully comply with the requirements of 35 U.S.C. §112, thereby rendering the rejection moot.

### **Rejections Under 35 U.S.C. § 103**

Claims 33-34 stand rejected under 35 U.S.C. § 103 as being unpatentable over Staggs *et al.* in view of Gralnick and Feyereisen *et al.*

These claims recite an electronic display having a curved vertical speed indicator scale and occurrence of a TCAS resolution advisory condition triggers enlargement of only a fractional section of the arcuate vertical speed indicator scale. That action not only draws the pilot's attention to the vertical speed indicator it increases the resolution of that section of the scale more than simply increasing the size of the entire indicator scale.

The Staggs, *et al.* patent teaches replacing a prior art arcuate vertical speed indicator in Figure 1 with a display in Figure 4 that has a tape or bar type vertical speed indicator with a linear scale 108 in Figure 4 (column 13, lines 22-27). As noted in the Office Action, this patent also does not even suggest changing the size of the vertical speed indicator in response to a TCAS resolution advisory condition.

As a result, the rejection cited Gralnick and specifically (column 6, lines 13-57) therein as allegedly teaching increasing the indicator scale from +500 to +6000 FPM. However, Gralnick teaches no such thing. Firstly, Figures 2A, 2B and 2C depicting the vertical speed indicator during several different traffic situations, all show the same size

indicator scale both in terms of physical size and range of speeds. Secondly, the passage in column 6 cited by the rejection merely mentions that the background color of the vertical speed indicator scale changes for the different traffic situations. The description states that the scale section from +500 to +6000 FPM may have a yellow, red, or green background in different TCAS resolution advisory situations (column 6, lines 26-31 and lines 41-45). Note that “resolution” as used in the patent is a term of art related to a TCAS advisory and does not denote a size change of the indicator scale. Therefore, the Gralnicks also fails to teach enlarging only a fractional section of the arcuate vertical speed indicator scale in response to a TCAS resolution advisory condition.

Feyereisen, *et al.* also teaches replacing a prior art arcuate, analog vertical speed indicator in Figure 2 by integrating a digital vertical speed indicator 134 into the Primary Flight Display in Figure 3 (paragraph [0054]). Therefore this patent teaches away from using an arcuate vertical speed indicator scale. Although the sections of this patent cited by the rejection mention increasing the size of the linear-shaped altitude indicator 128 at certain times, the reference does not mention increasing the size of the vertical speed indicator. Instead, paragraph [0054] in the patent teaches changing the color of the vertical speed indicator at different times. Nevertheless, at best the reference suggests increasing the size of the entire linear indicator scale, not enlarging only a fractional section of an indicator scale, as presently claimed. Because Feyereisen, *et al.* teaches away from using arcuate vertical speed indicator scale, it does not suggest enlarging only a fractional section of such a scale in response to a TCAS resolution advisory condition, that reference does not suggest the concept of the present invention that is missing from Straggs, *et al.*

Therefore, combining the teachings of Gralnick and Feyereisen, *et al.* with those of the Staggs, *et al.* does not suggest a TCAS resolution advisory condition triggering an enlargement of a fractional section of an arcuate vertical speed indicator scale. Therefore, claims 33 and 34 are patentable under 35 U.S.C. §103.

Claims 35-36 and 38-40 stand rejected under 35 U.S.C. §103 as being unpatentable over Staggs, *et al.* in view of Feyereisen, *et al.* and Gordon, *et al.*

Claim 35 has been amended to state that a fractional section of the vertical speed indicator scale changes shape in response to changes in the aircraft's vertical speed. As shown in Figure 3 of the present application, when the vertical speed is at a relatively low value, the VSI scale has the curved shape with a large constant radius as depicted by screens 300 and 400. However, when a significantly greater vertical speed occurs, the shape of the VSI scale changes to a quarter of an ellipse with a different curved shape as in screens 500 and 600 and described in paragraph [0020] of the application.

The Staggs, *et al.* does not suggest changing the shape of the prior art arcuate vertical speed indicator in its Figure 1 as the vertical speed changes. In fact this patent teaches away from using that curved vertical speed indicator scale. Feyereisen, *et al.* similarly teaches away from using a curved vertical speed indicator scale by integrating a pictographical VSI indicator 134 into a Primary Flight Display in Figure 3. Although this reference mentions changing the size of a linear altitude indicator, that does not suggest changing the shape of the prior art arcuate vertical speed indicator. The Gordon, *et al.* patent also teaches a vertical speed indicator as a bar 70 that does not change shape. Because none of the three references suggests changing the shape of an arcuate vertical

speed indicator in response to vertical speed changes, claim 35, claims 35 and 36 are not obvious under 35 U.S.C. §103.

Claims 38 and 39 are patentable for the same reasons.

Claim 40 states that in the display of claim 39, the TCAS resolution advisory condition triggers enlargement of only a fractional section of the curved vertical speed indicator scale. As noted previously regarding claim 33, Staggs, *et al.* and Feyereisen, *et al.* teach away from using arcuate vertical speed indicator scale and further fail to suggest enlarging a section of such as scale when a TCAS resolution advisory condition occurs. Nor does the Gordon, *et al.* patent provide that missing teaching.

Therefore, the combination of Staggs, *et al.*, Feyereisen, *et al.* and Gordon, *et al.* does not render claims 35-36 and 38-40 unpatentable under 35 U.S.C. §103.

Claims 37, 40 and 43 were rejected under 35 U.S.C. §103 as being unpatentable over Staggs, *et al.* in view of Feyereisen, *et al.* and Gordon, *et al.* and further in view of Gralnick.

These claims all state that a TCAS resolution advisory condition triggers enlargement of only a fractional section of the curved vertical speed indicator scale. As noted previously with respect to claim 33, both the Staggs, *et al.* and Feyereisen, *et al.* teach away from using arcuate vertical speed indicator scale and further fail to suggest enlarging only a section of such a scale, as opposed to enlarging the entire scale. Likewise Gralnick merely teaches changing the background color behind a section of a curved vertical speed indicator scale, but does not remotely suggest enlarging a fractional section of a curved vertical speed indicator scale. Gordon as well does not suggest using a curved vertical speed indicator scale nor does it enlarge any portion of a vertical speed indicator scale.

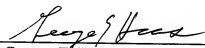
Because several of the cited references teach that other types of vertical speed indicators are preferred over an arcuate or curved scale, those references do not motivate one of ordinary skill in the art to produce a display with an arcuate or curved vertical speed indicator scale according to the pending claims. Therefore, claims 37, 40 and 43 are patentable under 35 U.S.C. § 103.

### **Conclusion**

In view of these distinctions between the subject matter of the present claims and teachings of the cited patents, reconsideration and allowance of the present application are requested.

Respectfully submitted,  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Joachim Laurenz Naimer, *et al.*

Art Unit: 3661

Serial No.: 10/679,975

Examiner: Tran, Dalena

Filed: October 7, 2003

For: Dynamic VSI Display

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an amendment in the above-identified patent application.

The fee for that amendment is calculated as shown below:

**CLAIMS AS AMENDED**

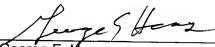
	Claims After Amendment		Highest Number Paid For Previously	Number Extra	Rate	Additional Fee
Total Claims	14	Minus	31	X	\$ 50.00	= \$0.00
Independent Claims	3	Minus	3	X	\$210.00	= \$0.00
First presentation of a Multiple Dependent Claim					\$185.00	= \$0.00
					Total Fee	\$0.00

No additional fee is required.

Nevertheless, the Commissioner is hereby authorized to charge any additional fees which may be required or credit any overpayment to Deposit Account No. 17-0055.

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